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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/649,737

08/28/2003

Hisayuki Kato

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5698

7590

09/28/2004

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EXAMINER

PRENTY, MARK V

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 09/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/649,737

Applicant(s)

KATO, HISAYUKI

Examiner

MARK V PRENTY

Art Unit

2822

Am

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-8 is/are allowed.
- 6) ☒ Claim(s) 1,3,4 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413).<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)              |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____   |

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This Office Action is in response to the amendment filed on September 9, 2004.

Claim 9 is objected to because it ends in two periods. Correction is required.

Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (newly cited United States Patent 6,175,145 – hereafter Lee).

With respect to independent claim 1, Lee discloses (see the entire reference, including the Figs. 5A-5F disclosure, for example) a semiconductor device formed on a substrate 1, comprising: an interconnection line 30 formed on the substrate and provided to structure a prescribed circuit; and a fuse 50 incorporated into said interconnection line, said fuse and a connection portion of said interconnection line electrically connected to the fuse being formed of different metals (i.e., copper and aluminum, respectively – see column 3, lines 40-46, and column 4, lines 42-44), wherein an oxidation speed of the (copper) metal forming said fuse is faster than an oxidation speed of the (aluminum) metal forming the connection portion of said interconnection line. Claim 1 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Lee.

With respect to dependent claim 3, Lee's fuse 50 is formed of a copper metal (see column 3, lines 40-46), and the connection portion of said interconnection line 30 is formed of an aluminum metal (see column 4, lines 42-44). Claim 3 is thus rejected under 35 U.S.C. 102(b) as being anticipated by Lee.

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Claim 4 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee et al. (newly cited United States Patent 6,175,145 – hereafter Lee).

Claim 4 depends on claim 3. The explanation of the above rejection of claim 3 under 35 U.S.C. 102(b) as being anticipated by Lee is hereby incorporated by reference into this rejection of claim 4 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee.

Any difference, therefore, between claim 4 and Lee is a process difference. Lee's semiconductor device appears to be the same as or similar to the claimed device, particularly with respect to their copper fuses being coplanar with an insulating layer. Claim 4 is thus rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee. See MPEP 2113.

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Lee et al. (newly cited United States Patent 6,175,145 – hereafter Lee) together with Delpech et al. (United States Patent 6,271,574 – hereafter Delpech – already of record).

Claims 9-11 depend on independent claim 1. The explanation of the above rejection of independent claim 1 under 35 U.S.C. 102(b) as being anticipated by Lee is hereby incorporated by reference into this rejection of dependent claims 9-11 under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 9 and Lee is claim 9's fuse is formed from at least two portions different in width.

Delpech teaches that forming a fuse from at least two portions different in width increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

It would have been obvious to one skilled in this art to form Lee's fuse from at least two portions different in width in order to increase its efficiency as taught by Delpech.

Claim 9 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 10 and Lee is claim 10's fuse has a width gradually reduced from an end toward an intermediate portion of said fuse.

Delpech teaches that forming a fuse such that its width is gradually reduced from an end toward an intermediate portion increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

It would have been obvious to one skilled in this art to form Lee's fuse such that its width is gradually reduced from an end toward an intermediate portion in order to increase its efficiency as taught by Delpech.

Claim 10 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

The difference between claim 11 and Lee is claim 11's fuse has at least three different widths from the end toward the intermediate portion.

Delpech teaches that forming a fuse such that it has at least three different widths from the end toward the intermediate portion increases its efficiency (see the entire patent, particularly the Fig. 3 disclosure).

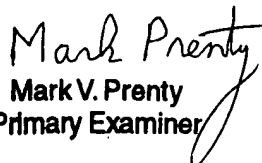
It would have been obvious to one skilled in this art to form Lee's fuse such that it has at least three different widths from the end toward the intermediate portion in order to increase its efficiency as taught by Delpech.

Claim 11 is thus rejected under 35 U.S.C. 103(a) as being unpatentable over Lee together with Delpech.

Claims 5-8 are allowable over the prior art of record.

Kato (United States Patent Application Publication 2004/0178425) is related to this application.

Registered practitioners can telephone the examiner at (571) 272-1843. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (571) 272-2800.

  
Mark V. Prenty  
Primary Examiner